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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,684	06/10/2005	Yong-Il Kim	21C-0228	3659

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CANTOR COLBURN, LLP
55 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

EXAMINER	
LOVELL, LEAH S	
ART UNIT	PAPER NUMBER
2885	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/538,684	KIM, YONG-IL	
	Examiner	Art Unit	
	Leah S. Lovell	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 Oct 2006, 20 Oct 2006 and 10 Nov 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 12-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 12-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 October 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Hisashi (JP 03-210750)

1. Applicant's arguments filed 13 October 2006 have been fully considered but they are not persuasive. Applicant indicated on page 15, lines 2-7 that Hisashi does not disclose "a lamp body having a tubular shape...wherein the electrodes are electrically insulated from each other by an insulating member." Applicant agrees at the bottom of page 14 that Hisashi discloses the other features of claim 1. Regarding the electrodes, they are indeed insulated from each other, the tubular body is glass, a inherently insulative material. More detail on the rejection is provided below.

Yasuo (JP 08-110507)

2. Applicant's arguments, see page 16 continuing through the first quarter of page 17, filed 13 October 2006, with respect to the rejection of claims 1-11 with Yasuo have been fully considered and are persuasive. The rejection of 13 July 2006 has been withdrawn.

Tsuneo (JP 06-203796)

3. Applicant's arguments, see page 17, line 8 through the end of the page, filed 13 October 2006, with respect to the rejection of claims 1-3 with Tsuneo have been fully considered and are persuasive. The rejection of 13 July 2006 has been withdrawn.

Noriyuki (JP 08-1858226)

4. Applicant's arguments, see page 18, filed 13 October 2006, with respect to the rejection of claims 1-3 with Noriyuki have been fully considered and are persuasive. The rejection of 13 July 2006 has been withdrawn.

Van den Bogert et at. (EP 0-329-226)

5. Applicant's arguments, see starting page 18, line 23, filed 13 October 2006, with respect to the rejection of claims 1-4 with Van den Bogert have been fully considered and are persuasive. The rejection of 13 July 2006 has been withdrawn.

Nishiyama (US 6,331,064)

6. Applicant's arguments, see the middle of page 19, filed 13 October 2006, with respect to the rejection of claims 12-27 with Nishiyama have been fully considered and are persuasive. The rejection of 13 July 2006 has been withdrawn. The Examiner would like to point out that the rejection is only being withdrawn due to excess of rejection, not because of the new limitation—"rectangular longitudinal cross section"—shape has been deemed an obvious modification.

Moon (US 2002/0141183)

7. Applicant's arguments filed 13 October 2006 have been fully considered but they are not persuasive. As indicated with Nishiyama, Moon discloses all required elements except the rectangular longitudinal cross section, but shape is deemed an obvious modification. Details to follow.

Kim (KP 1020020071355)

8. Applicant's arguments, see the middle of page 19, filed 13 October 2006, with respect to the rejection of claims 12-27 with Kim have been fully considered and are

persuasive. The rejection of 13 July 2006 has been withdrawn. The Examiner would like to point out that the rejection is only being withdrawn due to excess of rejection, not because of the new limitation—"rectangular longitudinal cross section"—shape has been deemed an obvious modification.

Drawings

9. The drawings are objected to because in figure 19 dated 20 October 2006 reference numeral 1124 is located on the drawing. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-10 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Hisashi (JP 03-210750).

Regarding claim 1, Hisashi discloses a lamp comprising:

a lamp body [12] having a tubular shape [figures 1 and 2], a cross-section of the lamp body including a major axis and a minor axis substantially in parallel with a light incident surface of an LCD panel [figure 9]; and

a plurality of electrodes [13a, 13b] applying discharge voltage to the lamp body,

wherein the electrodes are electrically insulated from each other by an insulating member [the insulating member is the glass tube that is situated between the electrodes].

In regard to claim 2, Hisashi discloses the lamp body having a rectangular tubular shape [figures 1 and 2].

Regarding claim 3, Hisashi discloses the electrodes comprise a first internal electrode disposed in the lamp body, and a second electrode disposed opposite to the first internal electrode, the first and second internal electrodes including a first and a second lead wire respectively, and a portion of each of the lead wires is protruded out of the lamp body [figures 2 and 3, the lamp would have to have internal electrodes to power the lamp].

Regarding claim 4, Hisashi discloses at least one of the electrodes being disposed on an outer surface of the lamp body [figure 3].

In regard claim 5, Hisashi discloses the electrodes comprising conductive plate shapes having a band shape arranged substantially in parallel with each other in a longitudinal direction relative to the lamp body, and the electrodes are spaced apart from each other [figure 3, the flat top and bottom of the electrode are band shaped and are parallel to each other].

In regard to claim 6, Hisashi discloses the electrodes comprising plated metal layers having a band shape arranged in a substantially parallel with each other in a longitudinal direction relative to the lamp body, and the electrodes are spaced apart from each other [figure 1 and 2].

Regarding claim 7, Hisashi discloses the electrodes surrounding a portion of outer surface of the lamp body comprising conductive plates shapes having a band

shape arranged substantially in parallel with each other, and are spaced apart from each other [figure 4].

In regard to claim 8, Hisashi discloses the electrodes surrounding a portion of outer surface of the lamp body comprising plated metal layers having a band shape arranged substantially in parallel with each other, and are spaced apart from each other [figure 2].

Regarding claim 9, Hisashi discloses the electrodes that are spaced apart from each other having a band shape arranged substantially in parallel with each other in longitudinal direction relative to the lamp body, and a portion of each of the electrodes is protruded out of the lamp body in a predetermined direction [figure 2].

Regarding claim 10, Hisashi discloses the electrodes that are spaced apart from each other comprising a pair of electrodes having a band shape arranged substantially in parallel with each other in longitudinal direction relative to the lamp body, and portions of the electrodes are protruded out of the lamp body in opposite directions [figure 2].

Regarding claim 28, Moon discloses the minor axis substantially perpendicular to the light incident surface of an LCD panel [the minor axis is the axis that points up through the cross section of the light tube which is perpendicular to the light incident face].

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 12-27, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon (US 6,527,414).

Regarding claim 12, Moon discloses a backlight assembly comprising:

a receiving container including a bottom plate and a plurality of sidewalls protruded from a side of the bottom plate to define a receiving space [figure 8A];

a plurality of lamps including a plurality of electrodes including first and second electrodes, a cross-section of the lamp body including a major axis substantially parallel with the light incident surface and a minor axis [figure 8a];

a first conducting part applying a first discharge voltage to the first electrode through a first path [figure 8A]; and

a second conducting part applying a second discharge voltage to the second electrode through a second path [figure 8A].

Moon discloses the claimed invention as indicated above. As shown in figure 3A, Moon discloses a ellipsoidal longitudinal cross section wherein "longitudinal" refers to the axis along the length of the light source. However, Moon does not disclose the lamp body having a rectangular longitudinal cross section. One of ordinary skill in the art would have been led to the recited rectangular cross section through routine experimentation and optimization. Applicant has not disclosed that the shape is for a particular unobvious purpose, produce an unexpected result, or are otherwise critical, and it appears prima facie that the process would possess utility using another shape. Indeed, it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). See also MPEP 2144.04(IV)(B). One would have been motivated to provide a rectangular cross section because the flattened end that that sort of cross section requires would reduce the movement of the light tube.

In regard to claim 13, Moon discloses an insulating member [43A, 43B] protecting the first and second electrodes.

Regarding claim 14, Moon discloses a plurality of lamp holders surrounding end portions of the lamp to absorb an impact which is provided from an exterior to the lamp [figure 8A].

Regarding claim 15, Moon discloses at least one lamp supporting member that prevents the sagging of the lamp [figure 8].

In regard to claim 16, Moon discloses the receiving container further including a pair of lamp fixing protrusions formed on the bottom plate so that the lamp is inserted into between the lamp fixing protrusions [figure 8A].

In regard to claim 17, Moon discloses the receiving container further including a receiving block disposed along inner surfaces of the side walls of the receiving container, and the receiving block supports a light diffusion plate with the receiving block [figure 8A].

Regarding claim 18, Moon discloses the receiving container including a first slot spaced apart from the end portion of the lamp by a first distance, a second slot spaced apart from the end portion of the lamp by a second distance greater than the first distance, and the first and second slots are disposed in a bottom plate of the receiving block [summary].

In regard to claim 19, Moon discloses the first and second electrodes having a band shape arranged substantially in parallel with each other are formed on outer surface of the lamp body, and portions of the first and second electrodes are protruded out of the lamp body into the first and second slots, respectively [summary, figure 9A].

Regarding claim 20, Moon discloses the first and second conducting parts including first and second common electrodes disposed in the first and second slots, and first and second connecting electrodes extended from the first and second common

electrodes to be connected to the first and second electrodes, respectively [summary, figure 8A].

In regard to claim 21, Moon discloses the first electrode being protruded out of the lamp in a first direction along the longitudinal direction relative to the lamp, and the second electrode is protruded out of the lamp in a second direction opposite to the first direction along the longitudinal direction relative to the lamp [figure 8A].

Regarding claim 22, Moon discloses the receiving container further comprising a receiving block disposed along inner surfaces of the sidewalls of the receiving container, and wherein the first and second conducting parts are disposed on the bottom plate of the receiving block [figure 8A].

Regarding claim 23, Moon discloses the first and second electrodes surrounding end portions of the lamp body [figure 8A].

In regard to claim 24, Moon discloses the first and second conducting parts comprising first and second clips connecting the first and second electrodes [figure 8A].

Regarding claim 25, Moon discloses an LCD apparatus comprising:

a receiving container including a bottom plate and a plurality of sidewalls protruded from a side of the bottom plate to define a receiving block [figure 8A];

a plurality of lamps including a lamp body having a plurality of electrodes having first and second electrodes disposed on the lamp body, a cross-section of the lamp body including a major axis substantially parallel with the light incident surface and a minor axis [figure 8A];

a first conducting part applying a first discharge voltage to the first electrode through a first path [figure 8A};

a second conducting part applying a second discharge voltage to the second electrode through a second path [figure 8A};

an LCD panel disposed on the receiving block [Summary]; and

a chassis secured with the receiving container to prevent the LCD panel from drifting [Summary].

Moon discloses the claimed invention as indicated above. As shown in figure 3A, Moon discloses a ellipsoidal longitudinal cross section wherein "longitudinal" refers to the axis along the length of the light source. However, Moon does not disclose the lamp body having a rectangular longitudinal cross section. One of ordinary skill in the art would have been led to the recited rectangular cross section through routine experimentation and optimization. Applicant has not disclosed that the shape is for a particular unobvious purpose, produce an unexpected result, or are otherwise critical, and it appears prima facie that the process would possess utility using another shape. Indeed, it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). See also MPEP 2144.04(IV)(B). One would have been

motivated to provide a rectangular cross section because the flattened end that that sort of cross section requires would reduce the movement of the light tube.

In regard to claim 26, Moon discloses the lamp body having a rectangular shape, the first and second electrodes having a band shape arranged substantially in parallel with each other, the electrodes formed on outer surface of the lamp body, and portions of the first and second electrodes are protruded out of the lamp body to be connected to the first and second conducting parts, respectively [figure 8A].

Regarding claim 27, Moon discloses the first conducting part comprising a plurality of first connecting electrodes connecting to the first electrode and a first common electrode connected to the first connecting electrodes, the first common electrode secured with the receiving block, and the second conducting part comprising a plurality of second connecting electrodes connecting to the second electrode and a second common electrode connected to the second connecting electrodes, the second common electrode spaced apart from the first conducting part to be secured with the receiving block [figure 8A].

Regarding claims 29 and 30, Moon discloses the minor axis substantially perpendicular to the light incident surface of an LCD panel [the minor axis is the axis that points up through the cross section of the light tube which is perpendicular to the light incident face].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leah S. Lovell whose telephone number is (571) 272-

2719. The examiner can normally be reached on Monday through Friday 7:45 a.m. until 4:15 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Renee Luebke can be reached on (571) 272-2009. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Leah Lovell
Examiner
10 January 2007